Mitigating Blast Effects

Vehicle Occupant Protection from IED Blasts

Customer(s):
U.S. Army TARDEC

Problem:
Military ground vehicle weight has skyrocketed as vehicles are increasingly armored to deal with threats such as Improvised Explosive Devices. Vehicles become too heavy to be air transportable, increase JP8 fuel logistics demands, and are more unstable in motion.

Solution:
To improve occupant survivability, adapted motorsports design lessons to military ground vehicles. Modern racecars allow drivers to survive horrific crashes, while the cars remain light weight. Lessons implemented include occupant impulse loading analysis, controlled deformable seat mounts, and shock transmission analysis. Benefits include **lives saved, weight reduction and better fuel consumption.**

Vehicle hull impulse loading from an IED explosion